

**REMARKS**

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

**Disposition of Claims**

Claims 1-22 are pending. Claims 1 and 20 are independent. The remaining claims depend, directly or indirectly, from claims 1 and 20.

**Rejection(s) under 35 U.S.C. § 103(a)**

Claims 1-15 and 19-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,091,067 (“Drobot”) in view of U.S. Patent No. 6,154,305 (“Dickensheets”). This rejection is respectfully traversed as follows.

Section 2143.03 of the M.P.E.P. requires consideration of every claim feature in an obviousness determination. The asserted combination of references must teach or suggest each and every claim feature. *See In re Royka*, 490 F.2d 981 (CCPA 1974); *In re Saether*, 492 F.2d 849, 852 (CCPA 1974). The Board of Patent Appeal and Interferences has recently confirmed that a proper obviousness determination requires that an Examiner make “a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art.” *See In re Wada and Murphy*, Appeal 2007-3733 (BPAI 2008) (citing *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995)). This rational was recently supported by the Supreme Court holding that “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int’l v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). This line of reasoning was further expanded upon by the Board of Patent Appeals and Interferences noting that when a reference is silent to an element, “it becomes incumbent upon the Examiner to provide a basis in

fact...that would support a finding [of the claim element being present].” *Ex Parte Sternby*, Appeal 2009-007462 (June 8, 2010) (non-precedential). Applicant asserts that the Examiner has failed to meet the requirements for producing a *prima facie* case of obviousness, for at least the following reasons.

The independent claims require, in part, an optical head that is miniature, *i.e.*, less than or equal to 3 mm in diameter and total length of approximately 30 mm. Applicants assert that neither Drobot nor Dickensheets disclose “wherein the optical head has a diameter less than or equal to 3 mm and a length of approximately 30 mm,” as recited in independent claim 1.

Turning to the rejection, the Examiner seems to suggest that the bimorph/fiber element 80 of Drobot is akin to the optical head of the claimed invention. *See* Office Action, p. 2. However, Drobot fails to disclose the claimed diameter and length of 3 mm and 30 mm, respectively, with respect to the bimorph/fiber element. In fact, Drobot fails to disclose any dimensions of the bimorph/fiber element at all. Thus, as the Examiner admits, Drobot fails to disclose or render obvious the miniature nature of the confocal microscope for use with an endoscope comprising both rapid and slow column scanning devices. *See* Office Action, p. 3.

Further, Dickensheets fails to provide that which Drobot lacks. Dickensheets discloses a single mode optical fiber 13 with a diameter of 125  $\mu\text{m}$ , which appears to be akin to the optical head of claim 1. *See* Dickensheets, col.6 ll.31-32. Even though this diameter of 125  $\mu\text{m}$  overlaps with “a diameter less than or equal to 3 mm,” as recited in claim 1, the claimed invention is patentable over Dickensheets because the above limitation recites a critical claimed range that is an essential characteristic of the invention. *See* MPEP § 2144.05, ¶ III (“Applicants can rebut a *prima facie* case of obviousness based on overlapping ranges by showing the criticality of the claimed range.”). According to critical objectives of the claimed invention, the optical head must be able to be miniaturized (not exceeding 3 mm in diameter in total), to make

it possible to produce an image in real time (at least 10 images/second) to cover a field to be imaged of the order of 100 x 100 mic *minimum*, and preferably 150 x 150 mic. The largest field of view obtained using the 125  $\mu$ m diameter optical fiber of Dickensheets is 80x60  $\mu$ m, which is well below the minimum achieved by the claimed invention. *See* Dickensheets, col.6 ll.51-52. Factual evidence to support that the claimed range improves the size of the field of view may be found, for example, at least in paragraphs [0049] and [0070] of the published application. Thus, the range recited in claim 1 is patentable over overlapping formulations disclosed in the prior art because the claimed range provides an improved field of view for the confocal microscope imaging device.

Also, Dickensheets expressly fails to disclose the length of the optical head. However, the optical head cannot have a length of approximately 30 mm, as required by claim 1, because Dickensheets discloses that the entire microscope, including the optical head, is only 6 mm long. *See* col.6 ll.28-32.

The Examiner asserts, on page 3 of the Office Action, that “it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized both slow and rapid scanning systems like that of Dickensheets with the methods of confocal microscopy disclosed by Drobot for the purposes of providing a miniature micro-mechanical confocal microscopy device capable of a wide variety of scan speeds. Applicant disagrees with this assertion. The cited portion of Dickensheets discloses a raster-scan and a lissajous scan image that may be obtained using the single mode optical fiber detection system/device. *See* Dickensheets, col.6 ll.33-52. While the Examiner is focusing on the various scan speeds and implementation of both a slow and rapid scanning mechanism, the Examiner is disregarding the miniature nature of the optical head in the claimed device, and the specifically claimed dimensions of the optical head which are expressly recited. The Examiner’s assertion is in violation of the guidelines set forth

in *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970) (“[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art”). Accordingly, it is clear that the cited prior art, whether considered separately or in combination, fails to disclose or render obvious the optical head with a 3 mm diameter and a 30 mm length, as required by the claimed invention.

In view of the above, it is clear that the Examiner’s contentions fail to support an obviousness rejection of the independent claims. Pending dependent claims are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 17-18

Claims 17-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Drobot in view of Dickensheets and U.S. Patent Publication No. 2003/0076571 (“MacAulay”). This rejection is respectfully traversed as follows.

As described above, both Drobot and Dickensheets fail to render the claimed invention obvious. Further, MacAulay fails to provide that which Drobot and Dickensheets lack. Specifically, MacAulay fails to disclose or render obvious an optical head with a diameter of 3mm and a length of 30mm in a confocal microscope/endoscopic device. MacAulay merely discloses a system whereby fluid matching at a light window is performed to carry out index matching at the target region in an endoscopy procedure. *See* MacAulay, paragraphs [0100]-[0101].

In view of the above, it is clear that the independent claims are patentable over Drobot Dickensheets, and MacAulay, whether taken separately or in combination. Dependent claims 17-18 are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 16 and 22

Claims 16 and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Drobot in view of Dickensheets and U.S. Patent No. 6,640,124 (“Elsner”). This rejection is respectfully traversed as follows.

As described above, both Drobot and Dickensheets fail to render the claimed invention obvious. Further, Elsner fails to provide that which Drobot and Dickensheets lack. Specifically, Elsner fails to disclose or render obvious an optical head with a diameter of 3mm and a length of 30mm in a confocal microscope/endoscopic device. Elsner merely discloses a VCSEL type point source for use with a confocal microscope device. *See* Elsner, col.6 ll.45 – col.7 ll.30.

In view of the above, it is clear that the independent claims are patentable over Drobot Dickensheets, and Elsner, whether taken separately or in combination. Dependent claims 16 and 22 are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

**Conclusion**

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 17452/016001).

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Respectfully submitted,

By Seema Mehta  
for Jonathan P. Osha 86235  
Registration No.: 33,986  
OSHA · LIANG LLP  
909 Fannin Street, Suite 3500  
Houston, Texas 77010  
(713) 228-8600  
(713) 228-8778 (Fax)  
Attorney for Applicant